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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,155	02/25/2002	Masaharu Tomobe	072982-0236	8138

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EXAMINER

BRINEY III, WALTER F

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/081,155	Applicant(s) TOMOBE, MASAHARU	
	Examiner Walter F. Briney III	Art Unit 2646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1, 5, 9, 13, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karam (US Patent 6,804,351) in view of Bingley (US Patent 4,631,470).**

Claim 1 is limited to *an internet protocol (IP) telephone*. Karam discloses a method and apparatus for detecting a compatible phantom powered device using common mode signaling. See Abstract. The method is directly applicable to systems where an IP-telephone is connected to a network, where that network must determine whether a terminal device requires the delivery of DC power. See Background of the Invention. With respect to the claims, the DTE (116) corresponds to an IP telephone. Clearly, the DTE is connected to a network device (114) over channel (118), which corresponds to *an input connector*. As the DTE is an IP telephone, any alternating current represents a *digital component* while a *DC current* is supplied by way of battery (90). The transformers (154) and (172), which correspond to the *separator*, split the digital component and DC current since the digital component is balanced, leaving only a DC component at each transformer's center-tap. The DTE further includes remaining terminal circuitry (122), which corresponds to the *telephone circuitry*, and power processor (96), which corresponds to the *power source circuit*. See column 4, lines 33-

50. Figure 2 depicts a prior art power processor, which includes an *input capacitor* (106) and a *direct-current to direct-current converter* (108), however, there is simply no disclosure directed towards an input current limiting resistor for limiting said current component. See column 2, lines 19-26. Furthermore, there is no disclosure directed towards a CPU for controlling said IP telephone.

The power processor (96) of Karam includes a switch (164), which selectively enables DC current to flow into the remaining power processor circuitry. See column 4, line 65, through column 5, line 29. As a result, in-rush current caused by the sudden application of unregulated DC voltage to the power processor will cause damage to the processor and may possibly load the secondary coil of the transformers (154) and (172). In-rush current is a well-established problem in the art as evidenced by Bingley. In particular, Bingley indicates in column 2, lines 3-39 that in-rush DC current caused by sudden closing of a switch contact can damage components. In an attempt to mitigate this problem, Bingley teaches inserting an input current limiting resistor (18) in series with regulating power supply circuitry (22). See figure 1. The value of the resistor (18) is varied in accordance with the output of a CPU (42). Note the input capacitor (21) of Karam corresponds to the input capacitor (24) of Bingley.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the variable resistor and CPU as taught by Bingley for the purpose of mitigating the damaging effects of in-rush current.

Claim 5 is limited to *the IP telephone in accordance with claim 1*, as covered by Karam in view of Bingley. As can be seen from the basic current in-rush limiting circuit

of figure 1, a transistor (30) is provided in parallel with the resistor (18) in order to remove the resistor after the in-rush current has substantially dissipated, i.e. *limit removing means*. See column 4, lines 63-67. Therefore, Karam in view of Bingley makes obvious all limitations of the claim.

Claim 9 is limited to *the IP telephone in accordance with claim 5*, as covered by Karam in view of Bingley. Figure 1 clearly depicts that the limit removing means is a switching transistor (30) in parallel with the resistor (18). Therefore, Karam in view of Bingley makes obvious all limitations of the claim.

Claim 13 is limited to *the IP telephone in accordance with claim 9*, as covered by Karam in view of Bingley. Bingley teaches a transistor (i.e. *a driving transistor*) (figure 3, element 258) that controls the bias to transistor 30. The *driving transistor* is controlled by the voltage across capacitor 226 (i.e. *a delay circuit from said DC/DC converter*) (column 9, line 27-column 10, line 4). Therefore, Karam in view of Bingley makes obvious all limitations of the claim.

Claim 17 is limited to *the IP telephone in accordance with claim 9*, as covered by Karam in view of Bingley. Bingley teaches a power supply with a bypass transistor (figure 3, element 30). The transistor is timed to turn off based on voltages measured by control units throughout the device (e.g. transistor 258). The entire device constitutes a CPU (i.e. *a central processing unit (CPU), said CPU determining control timing for turning said switching transistor on or off*). Therefore, Bingley anticipates all limitations of the claim.

Claim 21 is limited to the *IP telephone in accordance with claim 1*, as covered by *Karam* in view of Bingley. The configuration of *Karam* as modified by Bingley clearly suggests that a DC current fed through resistor (18) charges the input capacitor (24) of Bingley (106 in *Karam*) when the switch of *Karam* closes with the application of DC current, i.e. *during power-up of said IP telephone*. Therefore, *Karam* in view of Bingley makes obvious all limitations of the claim.

2. **Claims 3, 7, 11, 15, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Karam* in view of Bingley and further in view of the applicant's admitted prior art.

Claim 3 is limited to *the IP telephone in accordance with claim 1*, as covered by *Karam* in view of Bingley. Both *Karam* and Bingley disclose power supplies with input capacitors, but neither mentions the sizing of any particular components. However, it is clear that the input capacitance of *Karam* is set by current IP telephone standards. In any case, *Karam* in view of Bingley makes obvious all limitations of the claim with the exception *wherein said input capacitor has a capacity of about 100 μ F*.

The applicant has stated that in general there are at least two types of IP telephones on the market (disclosure, page 2, third paragraph). Of the two, specification B requires that the input capacity of the phone requires an input capacity between 47 and 470 μ F (page 3, first paragraph). The applicant does not specify that a capacitor of about 100 μ F provides an advantage within the listed range. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a charging capacitor value of 100 μ F as taught by the applicant's

admitted prior art for the purpose of allowing the general-purpose power supply of Bingley in view of Nelson to power an IP-telephone, which provides the advantage of low-cost communication.

Claims 7, 11, 15, and 19 present those limitations newly presented in claims 5, 9, 13 and 17 - as covered by Karam in view of Bingley - respectively, and are rejected for the same reasons in addition to those reasons presented in the rejection of claim 3 of which claims 9, 13, and 17 depend.

3. **Claims 2, 4, 6, 8, 10, 12, 14, 16, 18, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Karam in view of Bingley and further in view of Nelson et al. (US Patent 5,973,942).

Claim 2 is limited to *the IP telephone in accordance with claim 1*, as covered by Karam in view of Bingley. While Bingley teaches a *DC/DC converter* (22), there is no suggestion as to how to power it. Therefore Karam in view of Bingley makes obvious all limitations of the claim with the exception of *an input voltage sensor circuit for monitoring an input voltage to said DC/DC converter*.

Nelson teaches a similar DC/DC converter to that of Bingley, however, Nelson includes circuitry for deriving power in order to operate the PWM circuitry. Nelson proposes draining current from the input capacitor (24 in Bingley, 106 in Karam) at a low level, but the activation of the controlling switch Q3 does not occur until an *input voltage monitor* determines that the input capacitor is properly charged (i.e. *an output from said DC/DC converter being delayed according to a result of the monitoring by said input voltage sensor circuit*) (column 5, lines 43-56).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the circuitry to power the PWM circuitry as taught by Nelson for the purpose of providing power to the PWM circuitry wherein the method of Nelson provides the advantage of further reducing inrush current during startup by isolating the PWM circuitry from the input capacitor.

Claim 4 presents those limitations newly presented in claim 3, as covered by Karam in view of Bingley, and is rejected for the same reasons in addition to those reasons presented in the rejection of claim 2 of which claim 4 depends.

Claims 6, 10, 14 and 18 present those limitations newly presented in claims 5, 9, 13, and 17 - as covered by Karam in view of Bingley - respectively, and are rejected for the same reasons in addition to those reasons presented in the rejection of claim 2 of which claims 6, 10, 14, and 18 depend.

Claims 8, 12, 16 and 20 present those limitations newly presented in claims 5, 9, 13, and 17 - as covered by Karam in view of Bingley - respectively, and are rejected for the same reasons in addition to those reasons presented in the rejection of claim 4 of which claims 8, 12, 16, and 20 depend.

Response to Arguments

Applicant's arguments, see After Final Amendment, filed 02 September 2005, with respect to claims 1-21 have been fully considered and are persuasive. The finality of the last Office Action has been withdrawn. However, upon further consideration, a

new ground(s) of rejection is made in view of Karam (US Patent 6,804,351), Bingley (US Patent 4,631,470) and Nelson et al. (US Patent 5,973,942).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WFB
9/19/05


SINH TRAN
SUPERVISORY PATENT EXAMINER